



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| | | | | |
|---|-------------|----------------------|------------------------------|------------------|
| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 10/532,140 | 04/20/2005 | Hisayuki Kawamura | 28955.4025 | 6207 |
| 27890 7590 01/19/2007 STEPTOE & JOHNSON LLP 1330 CONNECTICUT AVENUE, N.W. WASHINGTON, DC 20036 | | | EXAMINER KOSACK, JOSEPH R | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1626 | |
| SHORTENED STATUTORY PERIOD OF RESPONSE | | MAIL DATE | DELIVERY MODE | |
| 3 MONTHS | | 01/19/2007 | PAPER | |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| | | | |
|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/532,140 | Applicant(s) KAWAMURA ET AL. | |
| | Examiner Joseph Kosack | Art Unit 1626 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) 3-6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-2 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-6 are pending in the instant application.

Amendments

The amendment to the claims filed on October 25, 2006 has been acknowledged and has been entered into the record.

Status of the Claims

The current rejections on claims 1-2 are as follows: 35 U.S.C. 112, first paragraph for lack of written description; 35 U.S.C. 112, second paragraph, for indefiniteness in the term "having"; 35 U.S.C. 103(a) as being unpatentable over Kawamura et al. (WO/00/14174 A1); and Obviousness Double Patenting over USPN 6,541,129. Claims 1-2 are also currently objected to for containing elected and non-elected subject matter. Claims 3-6 are currently withdrawn from consideration.

The elected subject matter of claims 1-2 will be expanded to be: L is a single bond, Ar¹ though Ar² are condensed aryl groups having 10-18 nuclear carbon atoms, Ar³ to Ar⁶ are aryl groups having 6 to 18 nuclear carbon atoms; and Ar⁷ to Ar¹⁰ are arylene groups having 6 to 18 nuclear carbon atoms.

Previous Claim Objections

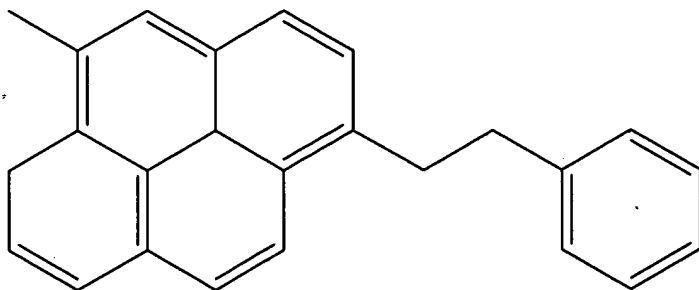
Claims 1-2 were objected to in the previous action for containing elected and non-elected subject matter. The non-elected subject matter has not been completely cancelled from the claims in the amendment filed October 25, 2006, therefore the objection is maintained.

Previous Claim Rejections - 35 USC § 112

Claims 1-2 were rejected in the previous action under 35 U.S.C. 112, first paragraph for failure to have an adequate written description. Applicant's arguments and amendments have remedied the issue and the rejection is withdrawn.

Claims 1-2 were rejected in the previous action under 35 U.S.C. 112, second paragraph as being indefinite. Applicant has traversed the rejection on the grounds that the rejection is based on the breadth of the claims and not the clarity of the recited scope.

The Examiner respectfully disagrees. The current status of the claims is that Ar^3 to Ar^6 each represent a substituted or non-substituted aryl group having 6 to 18 nuclear carbon atoms. It is unknown to the Examiner whether this definition is limited to single ring and condensed ring structures, or if it includes structures with two rings linked together such as:



If the definition includes linked structures, there is no definition as to what the possible linkers could be. If the above structure is to be interpreted as a substituted structure, do the nuclear carbons of the extraneous phenyl ring count towards the 6 to 18 nuclear carbon atoms? Therefore, the definition of the groups is indefinite and still warrants a rejection under 35 U.S.C. 112, second paragraph. The rejection is maintained.

Previous Claim Rejections - 35 USC § 103

Claims 1-2 were rejected in the previous action under 35 U.S.C. 103(a) as being unpatentable over Kawamura et al. (WO/00/14174 A1). Since the amendment to the claims filed October 25, 2006 has a proviso that eliminates the elected compound, the rejection is withdrawn.

Previous Double Patenting Rejections

Claims 1-2 were rejected in the previous action on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,541,129. Applicant has filed a terminal disclaimer, which has been approved. Therefore, the rejection is withdrawn.

Claim Objections

Claims 1-2 are objected to for containing elected and non-elected subject matter. The elected subject matter have been identified supra.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-2 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In the instant case, compounds of formula I are claimed to have a substituted or non-substituted aryl group having 6 to 18 nuclear carbon atoms, a substituted or non-substituted arylene group having 6 to 18 nuclear carbon atoms, a substituted or non-substituted condensed aryl group having 10 to 18

Art Unit: 1626

nuclear carbon atoms, a substituted or non-substituted heteroarylene group having 10 to 18 nuclear carbon atoms, a substituted or non-substituted alkylene group having 1 to 18 carbon atoms, a substituted or non-substituted alkylidene group having 2 to 18 carbon atoms, an ether bond, or a thioethers bond.

From the language used in the claims, it is not know what the boundary is between what Applicant considers to be the invention and what is not considered to be the invention. For example, a substituted or non-substituted aryl group having 6 to 18 atoms is claimed. It is not known whether the 6 to 18 carbon atoms need to be part of a condensed ring system, multiple rings or ring systems connected by single bonds or linking groups, one ring with multiple substituents off of the ring where the total number of carbon atoms is between 6 to 18, one ring with multiple substituents off of the ring with the total number of carbon atoms of the ring system between 6 to 18 with as many atoms, including carbon, off of the ring system as desired, etc.... Therefore, claims 1-2 do not meet the requirements of 35 U.S.C. 112, second paragraph.

The following rejection is necessitated by the amendment filed October 25, 2006.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to

Art Unit: 1626

be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-2 rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamura et al. (WO/00/14174 A1).

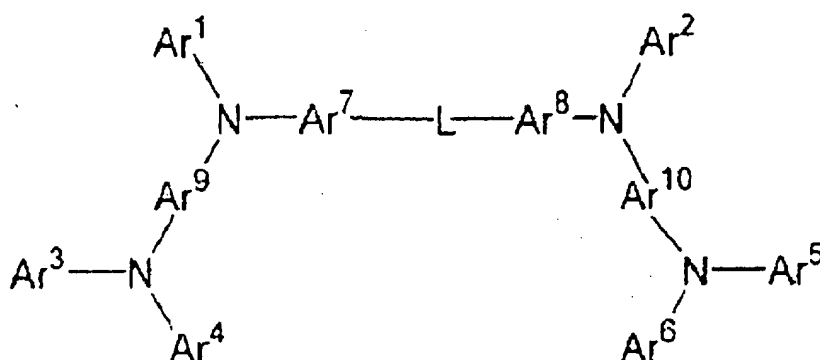
According to MPEP 2111.02, "If the body of a claim fully and intrinsically sets forth all of the limitations of the claimed invention, and the preamble merely states, for example, the purpose or intended use of the invention, rather than any

Art Unit: 1626

distinct definition of any of the claimed invention's limitations, then the preamble is not considered a limitation and is of no significance to claim construction.

Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165 (Fed. Cir. 1999)."

The instant invention cites a compound of the formula

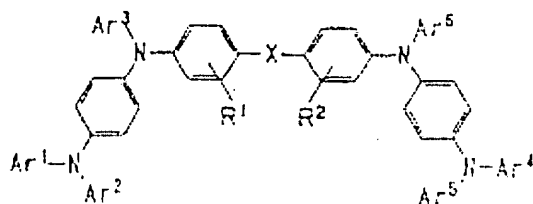


where: L is a

single bond, Ar¹ through Ar² are condensed aryl groups having 10-18 nuclear carbon atoms, Ar³ to Ar⁶ are aryl groups having 6 to 18 nuclear carbon atoms; and Ar⁷ to Ar¹⁰ are arylene groups having 6 to 18 nuclear carbon atoms.

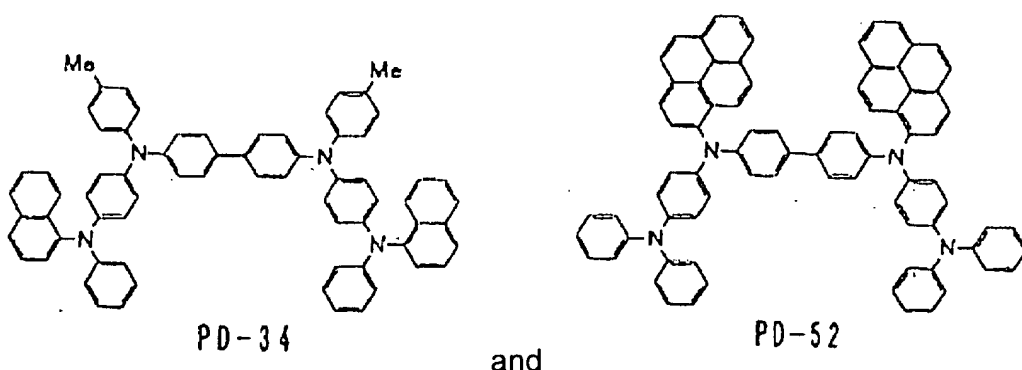
Determination of the scope and content of the prior art (MPEP §2141.01)

Kawamura et al. teach a compound of formula



with substitutions as defined. See page

3. Kawamura et al. also teach the particular compounds:



See pages 25 and 29.

Ascertainment of the difference between the prior art and the claims (MPEP §2141.02)

Kawamura et al. do not teach specifically the proviso at the end of claim 1 that:

provided that the conditions of (1) ~~and/or~~ and (2) are satisfied:

- (1) at least one of Ar³ to Ar⁶ is a substituted or non-substituted condensed aryl group having 10 to ~~50~~ 18 nuclear carbon atoms and
- (2) at least one of Ar¹ to Ar² is a substituted or non-substituted condensed aryl group having 12 to ~~50~~ 18 nuclear carbon atoms.

Finding of prima facie obviousness--rational and motivation (MPEP §2142-2413)

Kawamura et al. suggest the compound of the instant invention where Ar¹ through Ar⁶ are aryl groups having from 6 to 24 nucleus carbon atoms, R¹ and R² are hydrogen atoms, and X is a single bond. See page 3. Also, by virtue that individual compounds teach separately the conditions of the proviso, it is within the purview of one of ordinary skill to modify the structure of compound PD-34 cited above to include the aryl groups designated in the Ar³ and Ar⁶ positions (Ar¹

Art Unit: 1626

and Ar² in the instant case) from compound PD-52. Apart from a showing of unexpected results, the person of ordinary skill would deem that the disclosure of Kawamura et al. renders the instant claims obvious.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention was made to follow the synthetic scheme of Kawamura et al. to make the claimed invention. The motivation to do so is provided by Kawamura et al. Kawamura et al. teach the use of the compounds as a electroluminescent material with a small ionization potential and exhibits a large hole mobility when it is used as a layer or a zone. See page 2.

Thus, the claimed invention as a whole was *prima facie* obviousness over the combined teachings of the prior art.

Conclusion

Claims 1-2 are rejected. Claims 1-2 are objected to.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be

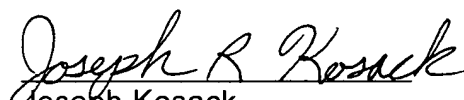
Art Unit: 1626

calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Kosack whose telephone number is (571)-272-5575. The examiner can normally be reached on M-F 5:30 A.M. until 2:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph M^cKane can be reached on (571)-272-0699. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Joseph Kosack
Patent Examiner
Art Unit 1626



KAMALA SAIED, PH.D.
PRIMARY EXAMINER

Joseph K. M^cKane
Supervisory Patent Examiner
Art Unit 1626